SOUTHWEST FISHERIES SCIENCE CENTER
THIRD QUARTER REPORT-FY 2001
For the Period April 1 - June 30, 2001

Submitted By: John Hunter, Division Director, Fisheries Resources Division.

Title of Accomplishment: Complete study of age, growth and sexual maturity of the common thresher shark, *Alopias vulpinus*, using fish sampled from the California-Oregon driftnet fishery.

Current status: Completed; manuscript submitted for publication.

Background: This type of basic biological information is essential to the understanding of the biology and population dynamics of this species, which has been recently designated a management unit species under the Pacific Council's HMS FMP. It is the most commercially important shark in California, and is now slowly rebounding after being overfished in the 1980s. Previous work on age, growth and maturity of this species has been hampered by sample sizes too small to analyze growth rate differences by sex, and errors made because of imprecise alternate length to total length conversions. Data on size at first sexual maturity was also lacking, especially upper range estimates of female first maturity and of size at male maturity.

Purpose of Activity: Revise and update the growth curve for common thresher shark (Cailliet et al. 1983) and estimate size/age at first maturity for males and females of this species from off California/Oregon, using observer data and samples from the driftnet fishery (1990-99).

Description of Accomplishment and Significant Results: The vertebral centra of 107 females and 68 males were aged using x-radiography and combined with data points from the previous study (total:N-317). In constructing the growth curve, we also applied a more precise alternate length to total length conversion. For estimating maturity we took the mean of the first quartile of 19 driftnet-caught females with fetuses or egg capsules present in their uteri, and noted the rate of increase in clasper size and calcification and presence of seminal fluid in males (N=769). Females were estimated to reach maturity at 303 cm TL and 5.5 yrs old, and males at about the same size (4.8 yr; 293-311 cm TL, mean=303 cm).

Significance of Accomplishment: These improved estimates should make demographic and population analyses more reliable. The study also corrects a length conversion problem that had made former age-at-size estimates inaccurate.

Problems: None.

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